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PIPELINE CONSTRUCTION

WORK OF YUZHNIIGASPROM IN GAS INDUSTRY DESCRIBED

Moscow IZVESTIYA in Russian 21 Sep 82 p 2

[Article by N. Lisovenko, IZVESTIYA in-house correspondent: "South of the Arctic Circle"]

[Text] On that day the morning was calm, and rapidly piling into the powerful GTT (caterpillar heavy truck tractor) they set out for the most complicated section of the future gas route, about which the opinions of the surveyers were diametrically opposed.

"Everything is in order. We will get there by ten," having read a silent question in the eyes of the "passenger", the driver hastened to calm. Nikolay Grigor'yevich Portyanko, covering the noise of the motor cried:

"Thank you! We are in a great hurry."

Since that time that he tied his life to the gas industry, hurrying has become his fate. They were in a great hurry. It was necessary to reach before dark the places where two variants of the route had been defined, to select the best of them, and then return to the settlement, run to the airplane in order to reach Donetsk with the already prepared decision. The tractor travelled quickly, then slowed down: it was raining and it suddenly became snow. Everything was lost in the dense haze. For some time the truck tractor still penetrated through the blizzard, but soon stopped.

"It seems we are lost," the driver said with confusion.

At some time even before study in the technical school and the institute, Nikolay Grigor'yevich, the then mischievous Kazakh Kol'ka from the station of Mar'yanskaya on the Kubani, imagined the work of a designer as: an enormous room with drawing tables, and behind them people in white clothes full of their own worth slowly working with the Whatman drawing paper with pomp. They do not hurry, are purposeful and wise. They are supervised by a man who is simultaneously similar to the director of a village school, and the head of a bulk plant where the father of Kol'ka had worked before the war. Precisely then, in those distant times, he suddenly wanted to become an engineer-designer.

Now when there is a northern blizzard around the truck tractor, he suddenly recalled this half-forgotten vision of his childhood, and as if he had been in similar situations many times, he noted with irony:

"Well so what, the hope has been dashed."

His companions laughed without humor: this was not the first time that they had been in the north and they had become accustomed to the trick of fate. The veterans of the institute relate that back in the early 1960's when the South Scientific Research and Planning Institute of the USSR Ministry of the Gas Industry which before the war was involved with designing pipelines for coking gas at the metallurgical plants of the Donbass, had to approach for the first time the problem of northern gas pipelines, several people who did not burn with passion to take a business trip to distant places and not so well-built places, announced that the institute was nevertheless called southern, and it would not deal with the north. To this the chief engineer then pronounced the famous phrase:

"I ask you to recall that everything that lies in our country to the south of the Arctic circle is in the zone of activity of the Southern Scientific Research State Institute for Planning the Gas Industry."

The surveyors of the institute did a lot in this zone: they made topographical surveying of the locality, fulfilled geological and hydrological studies, took soil samples where the pipeline will travel. Now it is necessary to compare which variants of the route will be more reliable and economical. For this reason almost 200 people have wandered for many months on the infinite swampy vast areas. For this purpose they have undergone heat and cold, and insect bites. For this purpose, as bad luck would have it, N. Portynko with his companions became lost.

They got out of the trouble, as they say, without loss. They found the stream of Yarudey. They orientated themselves on it, examined the variants of the route and returned to the settlement. True, not on that day, but 2 days later. After this could anyone assert that the colleagues of the Southern Scientific Research State Institute for Planning the Gas Industry have an office job?!

Nikolay Grigor'yevich had the occasion to be involved not only in the route, but also the preparation of the blue fuel for transporting on pipes. What other preparation does the gas require? It has to be brought to the steel channel, and the compressors drive it wherever you want. However it is not that simple. It is necessary to remove the particles of moisture from the gas and to dry it. Otherwise they condense, and merging with the hydrocarbons, similar to paraffin, freeze, forming enormous plugs within the pipe. Then no force can drive the blue fuel farther.

Thus deep drying of the gas was required. It can be done by using an adsorption or absorption method. In the first case, dry reagents are used, in the second, wet. The majority were for the first method. For this technology it was necessary to buy complicated equipment. Nikolay Grigor'yevich did not agree with this approach to the matter:

"The method of glycol drying should be placed in the plan for building of the gas pipelines," he insisted. "Then everything is simpler. We have the equipment and it is domestic. Moreover, after drying the gas needs to be cooled or the heat pipes will 'melt' the permafrost, and then you will have problems: you will have breaks."

As compared to the others, the "Donetsk variant" was more reliable and economical. It was supported by the Ministry of the Gas Industry. Since then the plans for preparing the Siberian blue fuel on the pipelines included only the method of YuzhNIIgiprogaz [Southern Scientific Research State Institute for Planning Gas Industry] which saved dozens of millions of rubles, and which was subsequently awarded USSR State Prize. Nikolay Grigor'yevich Portyanko became the laureate, and he is now already the director of the institute.

"It was quite clear for us then that in this five-year plan our institute will have to be the designer of all six new main gas pipelines which are coming from Urengoy," says the head of the department of prospecting P. Bezkorovaynyy. This same thought was confirmed by the chief engineer of the institute A. Solodovnikov, chief technologist of the department of compressor stations V. Anisimov, and other specialists of YuzhNIIgiprogaz. Here they add that it did not even seem to them that the scales of development would be so grand and the schedule so short.

Of course, they did not remain in private with such a complicated task. The Kiev institutes of Soyuzgazproyekt and All-Union Scientific Research and Planning Institute of Gas Transport, the Gorkov Giprogaztsentr, the Leningrad Giprospeetsgaz were involved in designing all six pipelines, including the 4,485-kilometer route Urengoy-Pomary-Uzhgorod crossing 150 km of permafrost soil, 700 km of swamps, 2,000 km of forest, 545 km of rock massifs, almost a thousand rivers and streams, and among them large water obstacles as the Ob', Volga, Kama, Don, Dniepr and others. They had the most difficult, the first 1300-kilometer section from Urengoy. YuzhNIIgiprogaz became not only the planning institute, but also the technological. This means that it was given the right and the responsibility to design the pipelines themselves, and the technology of extraction, transporting and processing the gas. And if we speak more precisely, then it had to create the project for all work and life on the route.

In front of me is a thick volume of a book on whose cover it is written: "Main Conclusions on Designing." Here there are a lot of curious things for a journalist. For example, one can find out what is only one of the 41 compressor stations located every 100-120 km on the first length of the gas pipeline. The data is very impressive. It consumes electricity almost as much as the first Zaporozh hydroelectric powerplant produced. In addition to the production housing, here it is planned to build a residential settlement, worker's supply base, helicopter platform, greenhouse, roads, schools, pioneer camp, river port, cow barn, pig farm, water duct and a sewer system. The total cost of this compressor station for northern conditions with the entire build-up is R 70 million. By the way here we should cite another figure: the collective of the YuzhNIIgiprogaz which hires 2,000 workers, now produces plain documents every year for billions of rubles of construction-installation work. In this case it is important to note the following circumstance: in the technical documents issued to the builders, of course the outlays for the most acceptable variant have been calculated. At the same

time the planners select these variants from several dozen to several hundred. Thus, in selecting the route of the gas pipeline Urengoy-Uzhgorod, over 300 variants and subvariants were rejected. This is how complicated and painstaking, not to mention the use of electronic computer equipment, is the labor of the designer, the man who not only is obliged to foresee the future but also to organize it.

In this respect I would like to recall how events have developed since the U.S. president Reagan announced his notorious "sanctions" in relation to the West European firms who by contract should have supplied the equipment for the Urengoy-Uzhgorod gas pipeline. The designers had an excellent idea at what these actions were aimed. The builders of the gas pipeline also understood this. For them an interruption in supplies could halt several types of work in the summer. In order for this not to happen, the machine builders of the Leningrad Metallicheskiy and Nevskiy plants, the Sverdlovsk turbomotor plant, workers of the Sumy machine construction association imeni Frunze and other enterprises announced that they will not permit disruption in the course of work on the gas pipeline route, and that they are ready to create new units whose foreign shipments could be interrupted because of American pressure.

The workers of YuzhNIIgiprogaz also gave their word. They decided to produce ahead of schedule all the technical documents for the compressor stations with the use of units from the Nevsk and Sumy plants. The shock-worker watch which continued for 1.5-months went further. The people worked with double energy. Some of them barely had the strength to go home. The section of compressor stations was especially difficult. It produced ahead of schedule all the working drawings with the use of domestic equipment for the first gas-pumping station Ivdel'skiy from Urengoy. The senior engineer V. Burykina, head of the group V. Gribkov distinguished themselves. A. Firsov, head of the group, engineer who because of his experience, knowledge and talent immediately produced ready decisions, worked especially energetically. This is considered the height of skill among the designers! And perhaps it is also an art.

The total weight of planning documents for the Urengoy-Pomary-Uzhgorod gas pipeline was about 20,000 kg. But the designers did not celebrate a "weighty" anniversary on that day when the last drawings were prepared and sent to the builders, but they marked the joyful fact they had developed a complete variant for replacing the foreign units with domestic: if the foreign firms, following the pressure of the United States could not resist and interrupted the supplies, then they would put into operation the Donetsk variant.

On that day, for the first time all the collectives of the institute went home on time after work. Everyone except the director, chief engineer, deputy director for science and the head of the department of prospecting. They again assembled in the office of the director and stated that the prospectors in the north needed to build their own stationary base. They said that the specialists from the department which was created directly on the route should be better supplied with equipment, including small helicopters and apparatus for aerial surveying. They said that it was necessary to expand the holiday hotel on the Sea of Azov because the people had earned the right for rest, especially this year. They also spoke about the fact that the time had come to think about accelerating work on the Yamburg gas field. They also spoke about the Yamal, which although it is beyond the Arctic circle, was also firmly within the realm of influence of YuzhNIIgiprogaz.

Only in the late evening, when lights began to burn on the streets of Donetsk did Nikolay Grigor'yevich return home. The children were already sleeping. His wife Nina Leonidovna, an engineer of the same institute, merely sighed silently and went to make dinner. Then, when he had eaten and risen from the table, she placed before him a new book of military memoirs:

"Look and see. It seems that this is what you love. Strategy, tactics, work with people."

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PIPELINE CONSTRUCTION

PIPELINE PROGRESS REPORT GIVEN

Foreign Shipments Begin

Moscow STROITEL'NAYA GAZETA in Russian 5 Sep 82 p 1

[Article by G. Semenov: "Relay Race of the Dockers"]

[Text] These are normal working days on the Urengoy-Pomary-Uzhgorod route. Pipes and equipment are arriving, the trench into which the pipe-layer is placing kilometers of pipeline welded into a length and insulated is advancing tens of kilometers every day. The route workers are acting with precision and harmony. Having developed socialist competition for timely start-up of the transcontinental gas trunkline, by using the leading methods and procedures of pipeline construction, they are successfully fulfilling the planned assignments.

As is known, this week contrary to the sanctions and unpardonable pressure of the Reagan administration, compressors arrived in Riga from France for the Urengoy-Uzhgorod route. They have been manufactured by the firm "Dresser-France." Each unit weighs over 60 T.

The unloading was entrusted to the experienced comprehensive brigade of the docker-machine operators headed by Ch. Tereshko. Having used special designs, the Soviet dockers, taking up the relay race of their French colleagues who loaded the compressors in Le Havre in short schedules, precisely and rapidly coped with the unloading.

Now a distant road on especially enlarged platforms to the station Sergino in West Siberia are waiting for the compressors. Then they will travel by winter road to the construction of the gas-compressor station.

The British company "John Brown Engineering" is also fulfilling its commitments. The Glasgow dockers have finished loading the first 6 turbines manufactured by the firm for the transcontinental gas pipeline on the Soviet container ship "Stakhanovets Yermolenko."

September Figures for Pipeline Progress

Moscow STROITEL'NAYA GAZETA in Russian 5 Sep 82 p 1

[Article: "Gas Pipelines Are the Central Construction Sites of the Five-Year Plan"]

Construction of the Gas Pipeline Urengoy-Pomary-Uzhgorod. Course of work on 4 September 1982 (in km)

Subdivisions	Assignments to the end of the construction	Welded into a length	Placed in the trench
Glavtribuprovodstroy	854	30	5
Glavvostoktribuprovodstroy	1403	105	60
Glavtribuprovodstroy	1111	395	280
Glavyuzhtribuprovodstroy	339	66	14
Glavukr neftegazstroy	390	35	-
Soyuzintergazstroy	354	48	41
Total	4451	579	400

Today one can say with confidence that all the best from the experience of building the Urengoy-Novopskov trunkline has been transferred by the route workers to the export line. The work of the line subdivisions on a single contract, introduction of progressive methods of welding and insulation of the pipe, and competition on the principles "worker's relay race" are all factors which have decisive importance for accelerating the rate of work on the transcontinental gas pipeline Urengoy-Pomary-Uzhgorod.

The lines of V. Belyayevaya from the welding-installation trust Glavtribuprovodstroy, I. Rozanov from the trust Soyuzgazspetsstroy, S. Gevorkyan from the Transcaucasus administration of pipeline construction are leading in the socialist competition.

Pipeline Laid on Bottom of Kama

Moscow STROITEL'NAYA GAZETA in Russian 5 Sep 82 p 1

[A. Krupnov: "Shores Connected"]

[Text] Laying of the pipeline on the bottom of the Kama has been completed at the construction of the Urengoy-Pomary-Uzhgorod gas trunkline.

Slowly, barely noticeable to the eyes, the steel body of the pipe goes under water. Like a giant mysterious creature, tired of lying on the land, it heads into the river depth. This is how it could seem to the random observer. But the people who have gathered on the shore know precisely the rate of movement of the welded section and the force of tension of the cable. Are they nervous? Of course they are. The greatest depth of the Kama at this place is 16 m. The pipe must lie even deeper, in a 6-meter trench opened on the bottom by the powerful suction dredge "Podvodnik-1."

The first 200-meter section almost goes to the bottom under water. The installers start to butt-join the second section.

Installers, welders, insulators, and machine operators of the pipelayers, this is the comprehensive brigade of I. Usenko on whose shoulders the main concerns for construction of the crossing have been placed. Ivan Makarovich himself is a machine operator of the pipelayer by speciality. He has worked on the routes for 20 years, and his undoubted credit is the early start-up of many fuel trunklines. In the brigade there are many veterans, masters of the highest qualification. They are capable of fulfilling these important tasks.

Yes, the foremen in the brigade are excellent. This is confirmed by the result: the laying of the inverted siphon through the Kama began 6 months ahead of schedule.

Now it is already ending. The third length has been connected into a line. The 1.5-meter diameter of the pipe continues to slide into the water. The powerful winch winds the thick cable.

During the preparation of the trench and after, the quality of work was checked by the senior from a diving station, the diver of first class V. Serbin together with his assistants. It is not often that you meet people of this occupation, therefore the special interest in their work is understandable. For a dozen and a half years Vasiliiy Ivanovich has been accustomed to questions about risk and critical situations. He answers them simply: "It is that kind of work." Now, after laying the pipeline, he again goes underwater. It is necessary to carefully check whether everything is in order on the bottom.

Yes, everything is in order. The first length of the gas pipeline, laid on the bottom of the Kama, is ready for testing. For reliability, as at all the water crossings, a second will be installed here. Then the next, for other fuel trunklines which begin in Urengoy.

A total of 561 water obstacles have been designated on the plan of the route which links Siberia with the western boundary. Thirty-four of them must be crossed by specialists of the all-union association Soyuzpodvodtruboprovodstroy. The Kama obstacle has been crossed. Ahead lie the Ob, Volga, Don, Dniepr. A total of 40 km of pipes of large diameter have to be laid on the bottom of large rivers in West Siberia and the European sector of the Soviet Union. This is the program of the association on the export trunkline. Its collective has adopted the commitment of coping with the assignment ahead of schedule.

Gas Workers, Builders Cooperate

Moscow STROITEL'NAYA GAZETA in Russian 5 Sep 82 p 1

[Article by A. Zhdanov: "Strengthen Our Cooperation"]

[Text] The all-union industrial association "Tyumengazprom" is the largest in the sector. In one cohort, its front lines, the builders are traveling on this path with the gas workers.

The chief engineer of the all-union production association "Tyumengazprom" Yu. Topchev told our Tyumen correspondent A. Zhdanov about some results and the outlook for this cooperation.

"Our collective is meeting our holiday with a good optimistic mood. The current production plans of the association have been successfully fulfilled, and for a number of main indicators even covered. On the eve of the Day of the Workers of the Oil and Gas Industry new facilities have been introduced and have started to operate at Urengoy. Preparation for the start-up of the line section of Novopskov gas trunkline, compressor stations and other facilities of this direction is underway.

This is today. As during the entire labor biography of the association, one clearly feels the strong ties which link the gas workers to the builders. Starting in 1966, when the Tyumen first-born of the gas industry, the Igrim-Serov gas pipeline was opened, they, by right, have shared with us all the joys and sorrows.

The lion's share has been joys. I believe this not so much because of the holiday mood. If we speak of the fulfillment of the large-scale task, then I cannot recall a case where we were let down by the builders. Take for example the crossing at the main current class of pipelines with diameter 1420 mm. This work which was started immediately after the first two Tyumen gas transport systems at the end of the 1960's, was fulfilled by the builders so energetically, with such a creative initiative, that there was simply no other way for us to master the new type.

Now, together with the Glavsibtruboprovodstroy and Kiev Institute imeni Ye. Paton we are involved in yet another more complicated problem on whose decision the further paths of domestic pipeline construction, and level of increase of transporting the blue fuel depend. In the Tyumen taiga depths, the first results will be obtained from verifying the unique multiple-layer pipes which are rated for working pressure of 100 atmospheres.

Our current main joint concerns are the start-up on the rated power of the length to Petrovsk, the beginning of operation of the line Urengoy-Novopskov and worthy fulfillment of the assignment of the party in the government for timely start-up of the export trunkline Urengoy-Pomary-Uzhgorod. The work on these three main directions is going at full speed.

In the future plans of our cooperation is achievement of a daily extraction of a billion m³ of Tyumen gas, development and build-up of Yamburg on the Tazov peninsula, and emergence on the promising fields of Yamala.

Gas Preparation Unit Completed

Moscow STROITEL'NAYA GAZETA in Russian 5 Sep 82 p 1

[Article by L. Kostylev: "Unit in Operation"]

[Text] The unit of comprehensive gas preparation No 7 has been started-up at the Urengoy gas condensate field.

This is an important object on the account of the trust Nadyngazpromstroy which in cooperation with the collectives from the association "Sibkom-plektomontazh" and other subcontracting organizations of the Ministry of Construction of Oil and Gas Industry Enterprises and Ministry of the Gas Industry are building up the field.

Lipetsk Plant Manufactures Pipe Assemblies

Moscow STROITEL'NAYA GAZETA in Russian 5 Sep 82 p 1

[Article by G. Zazvonov: "Pipe Assemblies"]

[Text] The collective of the Lipetsk industrial base from the trust Metalurgprokatmontazh of the USSR Ministry of Installation and Special Construction Work has recieved an important order. They must manufacture pipe assemblies for the gas compressor stations under construction in a short time.

The selection of this base was not an accident. Several months ago, the country's first mechanized line was put into operation for the fabrication of assemblies made of pipes with diameter up to 500 mm.

Pipeline Advances to Carpathians

Moscow STROITEL'NAYA GAZETA in Russian 5 Sep 82 p 1

[Article: "Uzhgorod Report"]

[Text] The first kilometer of pipes was laid yesterday on the Carpathian section of the Urengoy-Pomary-Uzhgorod gas pipeline.

A large part of the route extending 104 kilometers goes through passes, fast mountain streams, and swampy locality. With the help of powerful equipment, the builders plan to fulfill the final "red junction" here at the end of next year.

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PIPELINE CONSTRUCTION

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Carpathian Pipeline Construction Work

Kiev PRAVDA UKRAINY in Russian 14 Sep 82 p 2

[Interview with P. T. Barchuk, secretary of the Ivano-Frankovsk party obkom with correspondent A. A. Fedorov; date and place not specified: "In the Carpathian direction"]

[Text] The secretary of the Ivano-Frankovsk party obkom, P. T. Barchuk, who heads the oblast headquarters for coordination of work on this section of the trunkline, in an interview with our correspondent A. A. Fedorov discusses how work is going today at the construction site.

[Question] Pavel Timofeyevich, your excavators not only extract oil in the Cis-Carpathians, build the gas pipeline, but also drill wells at the gas fields of West Siberia.

[Answer] For the past years the collectives of the Ivano-Frankovsk administration of drilling operations have been drilling wells at the fields of the Tyumen Oblast. Today over three thousand people from our oblast are working there. This year alone they put into operation 147 gas wells. Since the beginning of organization of our expedition work in Siberia, the people of Ivano-Frankovsk have drilled a total of about 1.5 million meters of earth.

[Question] What is new at the Urengoy-Uzhgorod gas pipeline?

[Answer] The party and soviet agencies of the oblast are performing extensive organization, party-political work in the collectives of builders, installers and operators.

The oblast headquarters of the construction site coordinates the work of the designers, construction organizations, customer and organizes competition. This is fact. The builders have suggested redesigning a segment of the trunkline 30 km in length which should have passed through the mountains. They advanced the thought that it would better to lay this section on a plain and they substantiated their suggestion with calculations. The length of the route is not changed, and because of a decrease in the labor intensity of the

construction-insulation work, the construction periods are considerably reduced. And what is especially important, over 300 hectares of forest are preserved from cutting. The headquarters supported the builders and suggested to the designers that the route be changed. After intervention of the headquarters, the question was resolved of redesigning the section of the gas pipeline in the forest tract of Khotimir, where the trunkline intersected a preserve.

Temporary party and Komsomol organizations are operating on the production line. The obkom and its sections, the party raykoms are helping to organize competition, participating in the summary of results, and promoting its propaganda and advertising, disseminating the experience of the best workers. The welders have something to learn from the brigade which is headed by L. G. Timus'. This collective has already laid a third gas pipeline in the Ciscarpathians. It has intensively worked on construction of the trunklines "Bratstvo" and "Soyuz," as well as the ammonia pipeline Tolyatti-Odessa, the gas pipelines Urengoy-Petrovsk and Urengoy-Novoposkov. The experience of organizing work in the brigades of the welders V. L. Avanesyan, Yu. Ya. Timofeychuk, excavators S. A. Martirosyan, bulldozer operators B. I. Kazyr and others has been widely disseminated at the construction site.

In order to reward the winners of the competition in the oblast, challenge red banners and pennants have been instituted. The results of the labor competition are regularly advertised in the local press and transmitted on radio. The Bogorodchan and Rozhnyatov party raykoms are doing constructive work in the collectives of builders. They regularly give lectures and hold political information meetings. The builders have the opportunity of seeing television broadcasts and obtaining periodicals. Collectives of artistic amateurs, propaganda teams and artists of the oblast philharmonic come to them regularly. Athletic competitions and subject evenings are held.

[Question] At the end of August, on the Ivano-Frankovsk section of the gas pipeline, a group of foreign journalists who were accredited in our country visited. What impressions did they leave with?

[Answer] All of them were given the opportunity to visit the route, meet and talk with people, visit the pipe-welding base and the residential city of the builders. Our guests were convinced that construction of the gas pipeline was going at full speed, that a lot of powerful modern equipment is engaged here, and a sufficient number of pipes are arriving. The workers are laboring with great inspiration.

One of the journalists, a correspondent from the television company CBS, Donald McNeil, gave an interview to the Soviet journalists in which he said in particular: "All that we have seen here is admirable. Before this we had heard and read different gossip about the forced labor on construction of the gas pipeline, but now we are convinced that all of these statements are simply ridiculous. We liked the city of builders. Here it is clean, comfortable and there are good daily conditions. The people that we met with were open with us. They said: the Americans did not supply us with equipment, we are receiving it from Japan. If the Japanese refuse to supply us equipment, then we will make it ourselves. This was especially admirable for me. I believe that President Reagan with his discriminatory sanctions has achieved the opposite. He has only intensified patriotic feelings of the Soviet people, and their decisiveness to construct this trunkline in time."

[Question] The Ivano-Frankovsk section of the gas pipeline which travels through the Carpathians is considered one of the most complicated on the route. What is happening to the work schedules, will everything be done that is outlined in the commitments?

[Answer] On the 60-kilometer section of the route on which all the basic work must be done by the anniversary of the formation of the USSR, the builders are now ahead of schedule. Cleaning of the forest, planning of the construction strip, and general engineering preparation have already been done on over 50 kilometers. A total of 43 kilometers have been welded into a line. A total of 36 kilometers of pipeline have been laid. Construction of the crossings is successfully underway. In a word, the work rates are intensifying with each day.

Pipeline Construction Figures

Kiev PRAVDA UKRAINY in Russian 14 Sep 82 p 2

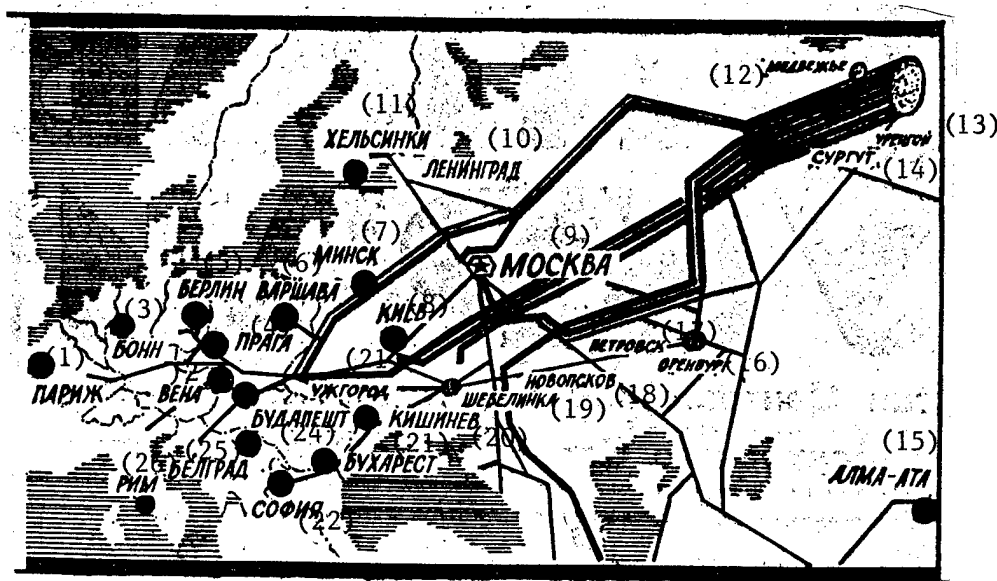
[Article: "Pulse of the Gas Pipeline"]

[Text] According to the latest data, on the sections of construction of gas pipeline which are under the management of the production association "Ukrgazprom" 54.2 kilometers will be completely finished by 10 September, laid in the trench and filled, another 116.7 kilometers of steel line will be prepared for insulation and laying. Trenches are now being dug for these pipes which have already been welded on the route. The builders are hurrying: the volume of excavation operations is great, and autumn with its rain is around the corner. A total of 115.3 kilometers of trenches have been dug. The reserve for operation of the insulation machines and subsequent laying of the steel line is present, but it is not so great: a total of 259.3 kilometers of pipes have been brought to the route, and 314.1 kilometers have been welded on stands. The excavators are not holding back their comrades who are working in a single line.

The welding-installation subdivisions of the trust "Krasnodartruboprovodstroy" are holding the rate well. On the section allocated to them extending 173 kilometers, they have prepared 89 kilometers of pipes into lengths, brought 77 to the route, welded 59 kilometers, dug trenches for 33, insulated pipes for 21 and filled 20.7 kilometers. Not all the subdivisions are maintaining this density of spacing at the final operations. Even the collectives of the Transcaucasus administration of pipeline construction who have finished and filled more than the Krasnodar workers, 33.5 kilometers, are delaying with insulation and laying of the pipes. It is true that they are working under more difficult conditions, in the foothills of the Carpathians and in the Carpathians themselves. Now the main line operations are being developed at the last section of the entire gas pipeline, between kilometer 4326 and 4460. Nevertheless, it is impossible to forget that autumn in the mountains is the most difficult time for the route workers.

The builders from the Transcaucasus have decided to lay in the Ukraine a hundred kilometers of trunkline this year out of the 222 kilometers of the entire section entrusted to them. In less than 4 months they are faced with

laying double what has already been done. The task is difficult, but quite feasible. It is necessary only to solve a number of questions more quickly. The working drawings and estimates for the section have not yet been issued by the institute All-Union Scientific Research and Planning Institute for Gas Transport. Cutting of wood in the construction zone has been delayed, especially in the Lvov Oblast, therefore it is impossible to prepare the route. The interference of both local organizations and "Ukrغازprom" the customer for all operations, is clearly needed here. Everything that the builders need they should obtain precisely on schedule, only then will the pulse of the construction site beat precisely with complete filling.



Key:

- | | |
|----------------|---------------|
| 1. Paris | 21. Bucharest |
| 2. Vienna | 22. Uzhgorod |
| 3. Bonn | 23. Sofia |
| 4. Prague | 24. Budapest |
| 5. Berlin | 25. Belgrad |
| 6. Warsaw | 26. Rome |
| 7. Minsk | |
| 8. Kiev | |
| 9. Moscow | |
| 10. Leningrad | |
| 11. Helsinki | |
| 12. Medvezhye | |
| 13. Urengoy | |
| 14. Surgut | |
| 15. Alma-Ata | |
| 16. Orenburg | |
| 17. Petrovsk | |
| 18. Novoposkov | |
| 19. Shebelinka | |
| 20. Kishinev | |

Equipment Supplied Ahead of Schedule

Kiev PRAVDA UKRAINY in Russian 14 Sep 82 p 2

[Article by N. Panchishkin, special correspondent of PRAVDA UKRAINY: "The Tasks Oblige"]

[Text] The collective of the Uzhgorod experimental plant of gas-transport turbine units has fulfilled its commitments ahead of schedule to ship gas pumping units for the Urengoy-Petrovsk gas pipeline. Now the Transcarpathian machine builders are applying all efforts so that the equipment for the Urengoy-Uzhgorod trunkline is shipped ahead of schedule.

The gas-pumping units "GPU-10" with ship gas-turbine drive are being manufactured in block design. The high degree of their installation readiness makes it possible to assemble with the minimum outlays, which is very important for the regions of Siberia and the extreme north. A total of 32 gas pumping units have already been prepared. Before the end of the year, the workers are faced with manufacturing another 15.

The comprehensive brigades of the mechanical-processing shop headed by G. V. Nuzhnyy and bearer of the Order of the Red Banner of Labor V. V. Garaz, as well as the brigades of A. A. Galiziv, V. I. Zdorenko and B. Yu. Blokh from the fitter-welding shop have achieved high results.

The work place of the comprehensive brigade of Boris Blokh is the assembly section of the air-purification devices for the gas pumping units. This is one of the largest collectives at the plant. It includes welders, gas cutters, fitter-assemblers, a total of 35 people. The brigade was set up in 1977 when the plant produced its first product. Many remained here after the end of construction. These are fitter Oleg Verevkin, gas cutter Arpat Chengeri, welders Vasiliy Pishta and Dmitriy Anton'. The collective works on a single contract, fulfills all types of operations, starting from delivery of the metal and its cutting all the way to assembly, painting and shipping out of the items. The quality is always high.

"We simply do not have problems of the 'plan'," says the electric arcwelder of the fifth class D. Yu. Anton'. "We believe that it is not worth it to come to the plant if we intend to work in a slipshod manner. We always fulfill the assignments by 115-120 percent."

Since the enterprise is experimental, a lot, if not all, has to be developed practically from nothing. In order to reduce the outlays for production of new parts, templates are widely used. The fitters O. Verevkin and V. Kushnarenko, for example, have perfected one of the attachments for assembly of the dust-trapping air-purifying devices. Labor productivity has increased 1.5-fold.

No less than 2 months was given to the development of the output of new equipment, but the brigade copes with this task, generally ahead of schedule. Production has already been mastered of comprehensive devices of air purification for the gas pumping units "GTN-25" manufactured by the Leningrad association "Nevskiy zavod" imeni V. I. Lenin (3 devices have been sent to the Grazovets compressor station).

The collective has complete interchangeability. Each has mastered related specialists. For example, the welder of fifth class V. Pishta can replace the fitter and the gas cutter. Assembly welding has been introduced: individual parts are not welded, but entire blocks and assemblies. The time for fabrication of the units has been considerably reduced. Semiautomatic machines are widely used.

"Our enterprise is comparatively young," says the deputy secretary of the party committee F. G. Revva. "The plant is the same age as the 10th Five-Year Plan. Only its first phase is operating. But, despite this fact, the plant collective has achieved high results. In the first 6 months, R 3.7 million worth of products in addition to the plan were produced. Labor productivity increased by 8.8 percent. The tasks facing us require early fulfillment of the commitments for shipment of equipment for the construction site of the century. In response to the discriminatory measures of the U.S. administration, our workers have given their word to produce 2 gas pumping units in addition to the plan, as well as 10 rotary heaters for the active compressor stations."

In 1983, the plant will begin to manufacture gas pumping units with the use of a new, fully pressurized heater "N-235" whose output has been set up in close cooperation with the Nevskiy plant.

Its production requires steel casting in a large quantity. In the first quarter of 1983, a block of casting shops will be started up, as well as a shop for painting equipment. Housing No 2 equipped with powerful load-lifting devices is being prepared for output.

In order to provide the enterprise with workers, a professional-technical school for 600 places is under construction. This will be the second professional-technical school.

Builders, Subcontractors Reports Given

[Article: "The Builders and Subcontractors Speak"]

[Text] Thirty fighters of the construction team, students of the Borshchevskiy technical school of mechanization and electrification of agriculture have participated in the preparatory work for construction of the Gussyatin gas compressor station. They worked well. They laid the foundation of the garage, helped in the installation on the reinforced concrete platform, did carpentry work, and unloaded cars. I would especially like to note the commander of the team V. Nyatyna who attracted the others by his example.

P. Durysh, brigade foreman of carpenters-concrete workers, Teriopol Oblast Fitters O. Verevkin and V. Kushnarenko prefected one of the attachments for assembling the dust-traps of air-purification units. Labor productivity increased 1.5-fold. This is how all of our workers are creatively filling the tasks for the Urengoy-Uzhgorod gas pipeline. We understand very well how important it is to provide the builders with the necessary equipment ahead of schedule. We are proud of the fact that we are participating in the construction of the transcontinental trunkline.

D. Anton, electric arc welder of the Uzhgorod experimental plant of gas transport turbine units

The Lutsk instrument-making plant is fabricating special devices for the gas pumping stations which measure the temperature of the turbines. The commitment of the collective is to fulfill the assignment with high quality and ahead of schedule. Thus, recently a batch of instruments was sent to the route workers which should have been manufactured at the end of the third quarter.

L. Lyalikov, worker.

We consider the orders of the builders of the gas pipeline to be especially important. In competing on the principle "worker's relay race," the plant workers have sent to the trunkline the first large batch of units "VAST 20-800 M" designed for effective operation under Siberian conditions of pipe-layers, rotary excavators, swamp vehicles "Tyumen'," pipelength carriers and other equipment. The communists are moving ahead in the competition.

V. Kutovoy, secretary of the party committee of the electric-apparatus plant of the Zaporozh production association "Preobrazovatel".

Progress on Grebenkov Compressor Station

Kiev PRAVDA UKRAINY in Russian 14 Sep 82 p 2

[Article by V. Bondarenko: "'Grebenkovskaya' Ahead of Schedule!"]

[Text] Many construction organizations including the Poltava trust "Grazhdanstroy" have been cooperating in the construction of Grebenkov compressor station. It is erecting here a cafeteria, and other objects of cultural and general purpose.]

The fourth quarter of 1983. This date is repeated more often than others in the Poltava Oblast headquarters, at meetings in the combine "Poltavpromstroy," and in the settlement of builders close to Lokhvitsa. In the fourth quarter of 1983, the Grebenkov compressor station should be started up. The start-up object dictates its intensive rhythm of work.

The combine "Poltavpromstroy" is the leading construction organization of the oblast. It has many important national economic facilities on its account, but they have not had occasion to build similar facilities. This circumstance forced the builders to think up all the details, to specify each building, and to compile the work schedules with regard for all the reserves.

The dump trucks arrived almost at even time intervals. They entered for unloading with a precisely measured maneuver, and without delaying for a minute, returned to the sand quarry. The band of concrete 6 m wide stretched along the forest and stopped suddenly beyond a heap of slabs and sand. These 1600 meters of approach road here at the construction of the Grebenkov compressor station are called the road of life without joking. They are striving to finish it faster, before the onset of the autumn slush.

The approach road, the warehouses of the customer, the motor-concrete assembly, dormitories, cafeteria and dispatcher point are now being built simultaneously by several organizations of "Poltavpromstroy."

"The construction of the start-up compressor station of the Urengoy-Uzhgorod gas pipeline is an honorable and important task for us," says the chairman of the oblast headquarters, secretary of the party obkom A. I. Kivin'ko. "Of course we are glad that the people have a correct understanding of the importance of this facility. Despite the fact that it is 180 km from Poltava where the main construction base of "Poltavpromstroy" is located, practically all the schedules are being maintained. Neither difficulties, nor temporary inconveniences fluctuated the resolution of the builders to fulfill the entrusted volumes of work on schedule and with high quality. Moreover, the collective of "Poltavpromstroy" is planning to assimilate R 1.5 million of capital investments this year instead of the 250,000 defined by the state plan. This will permit complete finishing of the preparatory stage for all types of construction."

The oblast headquarters has approved this patriotic initiative and has developed measures for its implementation. Equipment and materials arrive at the construction site every day. Work is being done throughout daylight on almost all sections. The comprehensive brigade from the garage No 3 of the Poltava truck trust headed by A. A. Ishchenko is working excellently. The drivers are fulfilling the daily assignments by 130-150 percent.

The rates could be higher but the designers let us down. The institute All-Union Scientific Research and Planning Institute for Transport of Gas until now has not issued the technical documents for the import part of the compressor station, and a lot of estimated documents have not been obtained. The start-up complex and the intra-construction title list for 1983 have not been presented. The Odessa branch of the institute "Ukrorgtekhstroy" of the UkSSR Ministry of Industrial Construction is delaying the documents for the pioneer base and the housing settlement of the builders. All of this does not permit correct and timely determination of the assignments for the subcontracting organizations of the UkSSR Ministry of Installation and Specialized Construction.

Pipeline Crosses Dnieper

Kiev PRAVDA UKRAINY in Russian 14 Sep 82 p 2

[Article by Ya. Volovichenko: "Crossing the Dnieper"]

[Text] The light and maneuverable helicopter "MI-2" hung low over the broad Dnieper lowland in a region of Prokhorovka near Cherkassy. The helicopter operator Anatoliy Vladimirovich Kobzar' cried in my ear:

"Look here."

Below the smooth water of the great Ukrainian river glistened, and not far off the Ros' stream. Large and small lakes were visible among the gas sand-dunes. When the machine descended even lower, we saw broad freshly cut trenches. Roughly 100 steps from this place, on the left bank, yet another picture opened up which changed the appearance of the ancient nature here: there were rows of excavators, pipelayers, suction dredges, gas-welding apparatus and trucks. Next to them were 15 house trailers, and in the center of the settlement an original summer pavilion.

The helicopter lit on a small area in the middle of the willows. Within a minute we had already become acquainted with those who had recently landed in this place.

Continuation of the water obstacle near Cherkassy, is one of the most important task facing the builders of the export gas pipeline on the Ukrainian segment of the route. On the bottom of 2 rivers and several lake reservoirs, they have to lay 2 lines of broad-sized pipes with total length of 10 kilometers, and over 30 kilometers on swampy areas.

Together with the senior engineer of the section for operation of the gas pipeline "Eksporttransgaz" V. M. Gorodnichuk, we headed for the settlement. We are met by Stepanida Ivanovna, the wife of the diver Gennadiy Vladimirovich Andreyev. This day she was the duty officer for the settlement and the industrial base at which the equipment was located. Stepanida Ivanovna in the course of all her work was our willing informant. The people here are involved in production matters, as well as shipment from Kanev and Cherkassy of new machines and materials. Almost everyone that arrived here, crane operators, bulldozer operators, divers, gas welders, and drivers before arriving in Prokhorovka worked on laying the gas pipeline near Kharkov and in the Donbass. All have good qualifications. Stepanida Ivanovna stressed with pride that her husband, Gennadiy Vladimirovich, learned diving during service in the Soviet Army and after return, for several years already has been diving, and helping the pipelayers to place with jeweler's accuracy the pipes on the bottom of the rivers.

Laying of the gas pipeline on the Dnieper, Ros' and the swampy locality in the region of Prokhorovka is being done by the construction administration of underwater-engineering operations No 5 of the trust "Vostokpodvodtruboprovodstroy." This administration is the subcontractor of the production association located in Cherkassy for transporting and supplying gas ("Eksporttransgaz"). Feelings of high mobilization and upsurge are now felt in the collectives. The people are striving to cope ahead of schedule with the assignment for laying the gas pipeline under difficult conditions of the water obstacles. Work began recently, but already many builders have shown here initiative, boldness and persistence. In addition to the Andreyevs, a lot of good things were said at the construction section about the driver of the suction dredge Viktor Bragar who was successfully deepening the Ros' river where the gas pipelines will lie. He has extracted tens of thousands of m³ of ground. The excavator operator Aleksey Balaksheyev is laboring excellently. The traces of his efforts were visible from the helicopter,

the broad freshly dug trenches. Laying of the pipes on the bottom of the river begins with these dredgings. Heavy-weighted (almost half-ton) pig-iron weights are now placed in the trenches. They will encompass the insulated and wood-lined pipes so that they do not float to the surface of the river.

Soon the powerful pipelayers of latest design will reach the route. They easily seize the pipes welded into lengths and lay them in the designated places. The drivers of these machines are now doing other operations. Here almost half of the workers have mastered several related professions. This makes it possible if necessary to replace each other. Overfulfillment of the standards has become a mass phenomenon here. Listless workers are not tolerated here. They are rapidly criticized in the working collectives and they are helped to adopt the necessary rate.

The senior engineer of the section for operation of the gas pipeline "Eksporttransgaz" Valentin Makarovitch Gorodnichuk led me to the old suction dredge with its nose section buried in the water. Even the plant signs on it had disappeared. But they decided to use this machine: after repair it successfully deepened the river bottom. The arrival from the Dneprovsk basin administration of water passages of the suction dredge "Dneprovets-1" is expected from day to day. The commander of the crew is the experienced worker Valdimir Zavoloka.

The Dnieper administration is also one of the subcontractors on the section near Prokhorovka. The collective of the section dredge is still on the way, but has already reported its commitment: in no more than 3 weeks it will fulfill the volume of work planned for a month. Why are they confident that this will happen? The representatives of the basin administration and the crew of the suction dredge visited Prokhorovka back when the designers of the All-Union Scientific Research and Planning Institute for transport of natural gas were studying here and were plotting the future route on paper. The volume of work and the condition for fulfilling it were defined.

Now the builders simultaneously with preparation of the trenches on the shores of the Dnieper and Ros' and in their beds are preparing and welding the pipes into sections and covering them with insulation and wood lining.

Of course not everything is going smoothly. The other day the power plant at the section malfunctioned. Shipment of pipes, electrodes for welding and lumber materials was delayed. All of the shortcomings were rapidly eliminated. The only unresolved task remained providing telephones for the section. In the association "Eksporttransgaz" for some reason they are being slow with the telephone line, although the association itself also suffers from this: there is no rapid communication with the builders and information from the section is delayed. The 2 helicopters which travel all the time from Cherkassy to Prokhorovka and back help to some extent.

To further develop the rate at the construction section at Prokhorovka is the task of the leaders of the contracting and subcontracting organizations. This will guarantee fulfillment of the commitment adopted by the builders in honor of the 60th anniversary of the formation of the USSR, to complete ahead of schedule all the work here and to make a bold crossing over the Dnieper and other water obstacles in this region.

PIPELINE CONSTRUCTION

GDR WORKERS JOIN GAS PIPELINE CONSTRUCTION

Kiev RABOCHAYA GAZETA in Russian 16 Sep 82 p 1

[Article by I. Litvin, RABOCHAYA GAZETA correspondent: "On the Urengoy-Uzhgorod Route, Shoulder to Shoulder With Friends"]

[Text] On the outskirts of the settlement of Bogorodchany, there is a neat residential city of builders from the German Democratic Republic. Build-up has already been completed here.

Not far away there are 4 posts visible with flags of the USSR, UkSSR, GDR and the Union of Free German Youth. Here everything is ready for the triumphant opening of the beginning of work on the line section of the Urengoy-Uzhgorod gas pipeline. The German builders will extend the gas-carrying steel length precisely from this zero marker. It is symbolic that exactly 7 years ago many of these builders participated in the holiday for the beginning of the large gas pipeline of friendship "Soyuz."

Last Saturday the German specialists finished installation of the welding base. A total of 19 kilometers of pipes have already arrived on this section of the route. They are domestic, manufactured by the Khartsyzsk pipe plant.

"Despite the sanctions of President Reagan, we are full of faith in the success, because our Soviet friends are working shoulder to shoulder with us," the leader of the party headquarters of construction Wolfgang Sukhi said at the meeting. "I call upon all communists, members of the Union of Free German Youth, the youth brigades, working collectives and their leaders not to spare efforts in order to fulfill the combat assignment of the Socialist Unified Party of Germany Central Committee and its general secretary, our comrade Erich Honecker."

The right to be the first to begin work was given to member of the Socialist Unified Party of Germany Burchard Oyeltse. Earth was dug and thrown towards the blade of the bulldozer. Then the machine operators Walter Boytel' and Kurt Ror together with Burchard Oyeltse, controlling the powerful machines, removed the first layer of earth.

"We are planning the area on the line section of the route," the director of the main direction for construction of the main gas pipeline Urengoy-Pomary-Uzhgorod Rolf Mayer comments on the event. "The first bulldozers, have already laid the road. We have a lot of work ahead of us. The geodesists have gone ahead. We plan to connect no less than 30 km of pipe by

sealing welding before the end of the year. But in addition, we will also build 4 compressor stations, housing, cultural-general structures. We have especially intensive work in Bara, in the Vinnitsk Oblast, where it is necessary to install a compressor station in a short time and to start it up by the end of next year."

The program is saturated, but it undoubtedly will be fulfilled in time. The business-like mood which reigns in the collective of the German specialists and precise organization of labor is convincing of this. Recently the party headquarters of the GDR representatives in an open letter appealed to the builders to review their commitments and to meet with the highest labor achievements the 33rd anniversary of the formation of the GDR and the 60th anniversary of the formation of the USSR.

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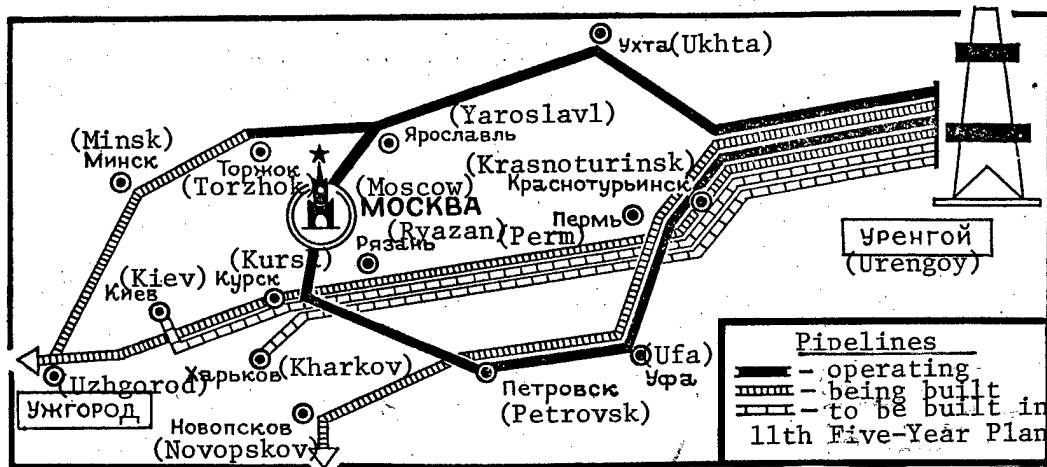
PIPELINE CONSTRUCTION

PROGRESS REPORTS ON URENGOY-UZHGOROD GAS PIPELINE CONSTRUCTION

Highlights of Project

Moscow PRAVDA in Russian 4 Oct 82 p 2

[Map and Caption: "Meet the Pipeline"]



[Text] 32 billion cubic meters — that is how much gas will be pumped in a year along one line of the Urengoy — Uzhgorod pipeline.

4,451 kilometers — that is the length of the gas pipeline.

The line will have 40 compressor plants and two gas cooling stations. Their total capacity is close to 3 million kilowatts.

7.6 billion rubles — that is roughly how much capital investment will be required to build the pipeline. Of this amount 4.35 billion is the cost of construction and installation work.

959 kilometers — this is the length of pipeline sectors which have to be laid across swamps and flooded terrain. The construction workers have to cross 794 water barriers.

About 20,000 qualified specialists will be working on the gas pipeline in the "peak period." It will be necessary to process 129 million cubic meters of earth, make and install almost 1.5 million tons of reinforced concrete and 70,000 tons of cast iron weights, and recultivate 27.2 million square meters of fertile land. Many roads, power transmission lines, cathode protection plants, helicopter landing zones, and other facilities will be built along the route. A great deal of work will also be done building compressor plants.

Gas Industry Minister Reviews Progress, Plans

Moscow PRAVDA in Russian 4 Oct 82 p 2

[Article by V. Dinkov, USSR Minister of Gas Industry: "It Serves People Faithfully."]

[Text] Minister V. Dinkov, at the request of our PRAVDA correspondent, tells about the continuing development of the country's gas industry.

Both in everyday life and at industrial enterprises we can no longer picture how to get along without natural gas. It is used for heating and for producing the most diverse kinds of products, from mineral fertilizers to detergents. Gas extraction and refining is accelerating rapidly in complete conformity with the decisions of the 26th CPSU Congress. The assignments outlined for the five-year plan are being overfulfilled.

The USSR has established the Uniform Gas Supply System, the largest in the world in terms of productivity and energy availability. It includes 190 deposits, refineries, underground storage facilities, and an interconnected system of trunk pipelines 140,000 kilometers long. We strive to see that the Uniform System operates efficiently and reliably and delivers more gas for the needs of the national economy. The working people of the sector have obligated themselves to surpass the obligations adopted earlier and extract (together with petroleum workers) 500 billion cubic meters of gas this year.

At the 26th CPSU Congress Comrade L. I. Brezhnev observed, "I consider it necessary to single out a rapid increase in the extraction of Siberian gas as a challenge of paramount economic and political importance. The Western Siberian deposits are unique. The largest one, Urengoy, has such enormous reserves that it can supply both the internal needs of the country and export, some of it to the capitalist countries, for many years."

Western Siberian gas is already reliably serving people. By 1986 the Urengoy deposit is to be brought to its projected capacity. Successful attainment of this goal depends not only on gas extraction workers, but also on construction workers.

Six pipelines must be laid in the current five-year plan to transport Urengoy gas. The first of them, from Urengoy through Ukhta and Gryazovets to Torzhok, is already in operation thanks to the combined efforts of construction workers of the USSR ministries of Construction and Petroleum Gas Industry Enterprises, Construction of Heavy Industry Enterprises, and Power and workers of the gas industry. Within a few weeks construction of compressor plants on the gas pipeline from Urengoy to Petrovsk is to be completed and the line part of the third trunk pipeline, from Urengoy to Novopskov, will be put to work.

Construction of the world's largest gas transportation system from Urengoy to Uzhgorod is going forward on a broad front. Launching of the system will make it possible to increase deliveries of Soviet gas to Western Europe and the socialist countries on a mutually advantageous basis. Despite certain discriminatory actions by the U.S. administration, Soviet people are filled with resolve to begin deliveries according to contract, that is, in 1984.

Gas extraction workers are deeply grateful to the labor collectives of the machine building ministries for their significant contribution to successful performance of assignments for extraction and transportation of gas.

Our principal supplier is the Ministry of Power Machine Building. Its enterprises have begun series production of a new generation of gas pumping aggregates with capacities of 16,000 and 25,000 kilowatts. Widespread introduction of these machines together with gas pumping units with aviation drive and capacities of 16,000 kilowatts will enable us to greatly reduce the volume of construction and installation work and the expenditure of gas for internal needs as well as improve the reliability of gas transportation systems and their productivity.

A multifaceted competition is now developing on the principle of the "worker relay" among associated labor collectives: gas extraction workers, contracting trusts, designers, metallurgical workers, and machine builders. The driving force of competition is our common interest in building up the economic might of our country. And as our Soviet state — which is celebrating its 60th anniversary this year — becomes richer, so does each Soviet citizen.

Progressive Labor Methods

Moscow PRAVDA in Russian 4 Oct 82 p 2

[Article by G. Chesnokov, head of the central dispatching department of the Ministry of Construction of Petroleum and Gas Industry Enterprises: "The Example of the Innovators"]

[Text] The first flow construction teams ["Potoki"] began to be concentrated on construction of the new Urengoy — Uzhgorod gas pipeline in June. There are already 20 such collectives at work here now, and the total will be 55. Most of the teams are moving ahead at a speed of one kilometer of finished pipeline a day.

They do all types of operations ahead of schedule: digging trenches, delivering pipe to the line, welding it, insulation, and burying the pipe. By 1 October 1,000 kilometers of pipe had already been welded into the line. This progress has been based on careful engineering preparation for production and the high sense of responsibility of workers and specialists, above all communists and Komsomol members, for the assigned work.

The most consistently working teams are those which have introduced the brigade method of labor organization and stimulation according to a single order employing the know-how of the Shchekino chemical workers. These are the cost accounting teams of the Soyuzgazspetsstroy and Kuybyshevtruboprovodstroy, and other trusts.

The line, of course, runs through territory where there are many swamps and river floodplains. It must be weighted down so that the pipeline does not rise up in the liquid soils. Enterprises of the USSR Ministry of Construction and other ministries have been commissioned to fabricate a significant part of the reinforced concrete weights, and in all nearly 1.5 million tons of them will be required. It is important to deliver them to the line without delay.

Progress on construction of the compressor plants is increasingly discussed at selector meetings in the Ministry of Construction of Petroleum and Gas Industry Enterprises, the general contractor on the project. By the end of this year 17 of the 40 plants must already be built. Areas for them are now being cleared and design elements delivered. Their construction must be stepped up considerably using the modular block technique. The subdivisions of other construction ministries which will build some of the compressor plants must also adopt it.

Each week the Collegium of the Ministry of Construction of Petroleum and Gas Industry Enterprises and the Central Committee of the Trade Union of Workers of Petroleum and Gas Industry summarize the results of competition on this priority project. "Flags of Labor Glory" are raised and "News Bulletins" published in honor of the victors. Letters of gratitude are sent to production leaders and their families. Other forms of moral and material incentive are also employed.

In September the team of A. Buyankin particularly distinguished itself, laying 32 kilometers of pipe. S. Gevorkyan's team did only half as much, but it was also recognized as a victor because it must work in the mountainous Carpathians.

All the collectives of the Ministry of Construction of Petroleum and Gas Industry Enterprises have adopted stepped-up obligations whose essential point is to perform the job included in their plans more rapidly. The rate of construction on the line increases every month. And this shows us that there is a real possibility of completing the new trunk gas transportation line ahead of schedule.

Notices on Supply Problems

Moscow PRAVDA in Russian 4 Oct 82 p 2

[Article: "Telegrams"]

[Text] To the USSR Ministry of Ferrous Metallurgy and USSR Gosplan:

The Dneprodzerzhinsk Metallurgical Plant is holding up delivery of rolled metal products to the Stavropol'truboprovodstroy [Stavropol Pipeline Construction] Trust. But our collective is building crucial facilities for the fuel-energy complex, gas pipelines.

The Cherpovets metallurgical workers are not completely meeting their obligations either. Specifically, they still have not shipped cutting steel for order No. 340915.

[from] L. Klyshnikov, Manager of the Stavropol'truboprovodstroy Trust

PRAVDA also receives telegrams about others who are behind. Specifically, the Novolipetskiy metallurgical plant is moving too slowly in shipping basic pig iron to the Nevskiy Zavod Association. And the Bugul'ma Building Materials Combine of the Ministry of Construction of Petroleum and Gas Industry Enterprises should step up delivery of live-in railroad cars to Labytnangi for the insulation workers who will be building the export gas pipeline. And this must be done now, before the navigation season ends, while it is still possible to ship these cars to Nadym by sea and then on to the line.

It seems that the party committees of the enterprises that are holding things up should take control of performance of these orders for the construction workers, and also for the industrial enterprises who are delivering their output to the gas transportation lines.

It is important to develop comprehensive competition on the "worker relay" principle to insure greater precision in the activities of associated workers.

Labor Organization in the Field

Moscow PRAVDA in Russian 4 Oct 82 p 2

[Article under the rubric "News from the Line": "A Word to the Construction Workers"]

[Text] A. Pinevskiy, chief of a comprehensive construction team (Potok) of the Soyuzgazstetsstroy Trust: "In recent weeks our collective, which is working in Tambov Oblast, has been averaging one kilometer of finished pipeline a day. We have never before achieved such a pace, let alone for an extended time. We think that the basis of our success is new principles of management which are now being tested and adapted in the trust.

"Briefly, the essential point is as follows. Whereas before machine operators, welders, and other associated workers were only subordinate to the general contracting subdivision administratively, they are now all part of one collective. The labor of the workers, engineering-technical personnel, and employees of a comprehensive team of the new type is paid for according to a single order for the final results, and we use the Shchekino method."

Ya. Myakush, Hero of Socialist Labor and Brigade Leader in the Welding-Installation Trust: "Recently a special commission signed the certificate accepting our temporary field camp located in Gorky Oblast for use. In addition to heated living quarters it has a club, a dining hall, a bathhouse, a library, a sports area, and a subsidiary farming operation. We would also like to have special living quarters for families, but the factories are not producing them yet. In this community, however, we have preschool children living together with adults."

Role of Machine Builders

Moscow PRAVDA in Russian 4 Oct 82 p 2

[Article by V. Senin, Leningrad: "The Leningrad Trademark"]

[Text] The machine builders of the Nevskiy Zavod Association imeni V. I. Lenin have begun assembling the GTN-25 series-produced gas pumping aggregate. It has a capacity of 25,000 kilowatts and is designed for the Urengoy - Uzhgorod gas pipeline.

The massive body of the low-pressure cylinder of the series-produced turbine rotated smoothly on the faceplate of the large vertical lathe. The cutting edge removed shavings from the top of the cast piece, revealing the cold glitter of steel. On the cylinder someone had written a chalked note in a sweeping hand: "Here's our pipe despite your sanctions, Mr. Reagan!"

In talking with the workers, engineers, and managers, I did not sense any expectation of an easy job. The Leningraders do not conceal the fact that it is not simple to perform a very complex order, particularly without lowering the goals adopted in the five-year plan. Already this year the association must deliver 15 models of the powerful machines, as good as foreign models, together with superchargers. The volume of production will increase by 20 percent during the year in some shops, and the production cycle will have to be reorganized. But at the same time, after careful engineering calculations and discussion in the brigades and at party meetings they were convinced that the collective can realistically fulfill this important task with honor and once again demonstrate to the advocates of various embargoes that their efforts to harm our country are in vain.

But there must be a high level of responsibility at every work position to achieve success. And it must go beyond just the association. It was important to establish solid contact with all associated enterprises. More than 30 industrial enterprises and institutes of the country were involved in preparation for series production of the gas turbine. At the initiative of communists a contract was recently concluded on creative cooperation among these collectives.

"We are now building a large shop to produce high-rpm compressors," says Yu. Ust'kachintsev, chief of machine assembly work. "We are completely rebuilding the plant in Chudovo. We are counting on the diligence of the construction workers here, because the time schedule is tight. In primary production we are concentrating manufacture of the compressors and superchargers in one shop. We have relieved the assembly shop of as many side orders as possible and are concentrating production of GTN-25 units there. Three assembly stands are ready for use there, and a fourth is under construction. We are completing the stand for testing turbines under natural conditions. A high-pressure gas line has been specially laid for it."

The new unit is slightly larger in size than those which are operating successfully on gas pipelines today. But its power output is 2.5 times greater. Each GPN-25 will give the country a savings of 1 million rubles. The latest advances of science and technology has been included in the design. These are the units that will make it possible to reach world record levels in practice. The composite unit consists of a turbine and a supercharger. The turbine itself is a complex assembly with high-pressure and low-pressure rotors and a power plant. The GTN-25 is the base model for a whole generation of machines with power outputs up to 40,000 kilowatts and more.

The job of assembling the first series-produced unit has been given to L. Babukov's brigade of metalworkers. It also debugged the experimental models. It is complex work. Each assembly must be mounted with extreme precision. This is necessary because of the high rate of rotation as well as the high temperature of the combustible gases. But the engineers say that if Babukov assembles the unit one need not worry. Leonid Dmitriyevich demonstrated his great skill long ago, in the days when units of 3,000, 5,000, and 10,000 kilowatts were being assembled.

"The success of the assembly workers depends greatly on the quality of the units delivered to them," Babukov explained. "Anatoliy Nikolayevich Shagin's brigade prepares the rotors for us. We are satisfied with the work of our associated workers."

Shagin has a demanding job. They connect the disks to which the blades are secured with tightening devices and fit them with great precision. If a metalworker yawns and allows a misalignment, this may destroy the work of the collective. Shagin has been at the plant for more than 30 years and long ago learned the truth of the saying "Better safe than sorry." And now, mounting the last disc, he is in no hurry. He turns the cylinder to the degree needed, measures it, turns it again, and measures again. Only after numerous checks does he decide to secure the assembly and pass it on to the acceleration-balancing stand.

At the end of the week the rotor with its new blades was ready to send to Babukov's brigade. Specialists examined it, took measurements, and hammered their mark into the cold metal, putting their seal on it, so to speak. Meanwhile Shagin was already at work on a new unit which will also be delivered to the construction on time.

Comment [From the editors]

There is perhaps no other construction ministry that is increasing its volume of work at such a pace as the Ministry of Construction of Petroleum and Gas Industry Enterprises. Moreover its labor collectives are doing this in large part by raising labor productivity. They are quick to take up new things in the organization of production and labor and actively introduce progressive technology. For example, 140 collectives have adopted the discrete-flow method of welding first tested by the brigade of V. Kalenov, winner of the USSR State Prize, and more than 800 crews have adopted the practices of excavator operator N. Tyumin, Hero of Socialist Labor.

The state too is doing a great deal to see that the construction workers have the most progressive domestic and foreign machinery. As the decree of the CPSU Central Committee on the work of this ministry related to technical re-equipping and introduction of progressive methods states, the construction projects of the gas and petroleum industry can be built even faster using this machinery. Thus far, unfortunately, the modular unit method of building surface facilities, whose authors received the Lenin Prize, is not working at full force. Compressor plants and comprehensive gas preparation installations are often turned over for operation behind schedule. Construction at the Urengoy deposit itself must also be stepped up.

The workers who are laying the pipe across the territory of some 20 oblasts also have numerous reserves. Road builders, machine operators, welders, insulation workers, and drivers must work together smoothly and answer for final results. That is why it is important for the management and party committee of the Ministry of Construction of Petroleum and Gas Industry Enterprises to constantly monitor the experiment being conducted in four trusts to improve the economic mechanism.

The fate of gas industry construction projects, including the Urengoy — Uzhgorod export pipeline, is not being decided in the forests and swamps of Western Siberia or the Carpathians only. Metallurgical workers, machine builders, transportation workers, power workers, and road builders also have a part, and it is an important one. Party, trade union, and Komsomol committees and economic managers must raise the level of accountability for fulfillment of contract obligations and bolster comprehensive competition among associated workers on the "worker relay" principle. A rapid increase in gas extraction and transportation of the gas to the European part of the country are essential for dynamic development of our economy during the 1980's.

Lipetsk Oblast Compressor Plant

Moscow PRAVDA in Russian 4 Oct 82 p 2

[Article by A. Starukhin, Lipetsk Oblast: "No One Wanted To Fall Behind"]

[Text] The earth trembles from the blows at this point in Lipetsk Oblast. The piles are being driven for the foundation of the future Yeletskaia compressor plant of the Urengoy — Uzhgorod gas pipeline. Three turbines with capacities of 25,000 kilowatts apiece will drive the Siberian gas further west under a pressure of 75 atmospheres.

This plant is being built by the collective of the Lipetskstroy Trust of the USSR Ministry of Construction of Heavy Industry Enterprises. The subdivision, which until recently worked almost exclusively building shops for ferrous metallurgical plants, just finished building a similar compressor plant on the Urengoy — Novopskov line. Furthermore, it did so in less than eight months as compared to 18 in the plan!

The turbines here are now turning in a test regime. On peak days the number of construction and installation workers at the site reached 1,200. It must also be considered that the design of the plant was fundamentally revised. The contractors decided it would be wise to replace the cast-in-place foundations with prefabricated ones, that it would be easier to haul in ready-to-use units than to set up a concrete works in this remote area. All the construction brigades, and 44 of them were working here in addition to almost as many installation brigades, went onto contracts. Competition grew heated. M. Abramov's brigade distinguished itself in foundation laying at first and performed its assignment by 156 percent. But soon the comprehensive collective headed by Hero of Socialist Labor M. Inozemtsev surpassed this achievement.

This is the kind of experience the first detachment of the Lipetskstroy Trust brought with it when it moved to the Urengoy — Uzhgorod line. The pace achieved earlier became the norm. In the first month of work at the Yeletskaya site they moved 150,000 tons of earth. This is not a small amount, although actually the work has just begun and a great deal more must still be done.

The pipe-laying workers of one of the teams of the Shchekingazstroy Trust have worked right up to the Yeletskaya plant.

Trust manager O. Sagitov reported, "We will finish our segment by the 65th anniversary of Great October."

Party Organizations Spur Work

Moscow PRAVDA in Russian 4 Oct 82 p 2

[Article by I. Zayonchkovskiy, secretary of the party committee of the Ministry of Construction of Petroleum and Gas Industry Enterprises, Moscow: "Under Control of the Party Committee"]

[Text] Another meeting of the party committee of the ministry was completed. As at earlier ones, the discussion primarily concerned the work of one of the operational groups of the party committee which had just returned from the Urengoy — Novopskov line. On this occasion communist Yu. Filippov, manager of the line and chief of a division of Glavtruboprovodstroy [Main Administration of Pipeline Construction], related what the emissaries from sector headquarters had seen in the segment being done by the Kuybyshevtruboprovodstroy Trust and what could be learned from them.

They saw a great deal. The trust is skillfully searching for production reserves. Their living quarters on the line are a kind of small urban development with all municipal conveniences, except that it is a mobile community. The results of work in each brigade are summarized every day. Interesting forms of material and nonmaterial incentive have been found. It was no accident that the team of workers from the Volga was the first in the sector to reach the milestone of one kilometer of finished pipeline a day.

Yu. Filippov's report was followed by additional information from communists of other trusts who were invited to the meeting of the party committee and whose collectives work in similar conditions. Next the progressive know-how in organizing labor and everyday life was reviewed at a joint meeting of the collegium and party committee of the ministry and the central committee of the sectorial trade union. And now many collectives have already been able to achieve a stable rate of 25-30 kilometers of trunk pipeline construction a month. These achievements were taken into account in adopting the ministry's new obligations: complete line work on the Urengoy - Novoposkov pipeline 2-3 months faster and lay at least 2,000 kilometers of pipeline on the Urengoy - Uzhgorod line this year.

The construction workers have everything necessary to achieve this goal: powerful and diverse machinery, materials, and professional skill. And the strategy for increasing the pace of work was clearly defined by the recent decree of the CPSU Central Committee entitled "The Work of the Ministry of Construction of Petroleum and Gas Industry Enterprises on Technical Re-equipping and Introducing Progressive Methods of Construction."

Success in the party committee's work depends directly on how well committee members are able to "listen to" the voice of the construction project and take to heart the affairs and concerns of those who are working on the line. I recall how two masters of rotation welding, B. Chayka of Soyuzgazspetsstroy and his colleague E. Yankovskiy from the Ryazan trust expressed their indignation about a certain point almost simultaneously. They said the designers made a mistake in building the welding stand for large-diameter pipe. They put the internal centering mount on a trailer, not a self-propelled unit.

I must admit, I was pleased by the involvement and technical competence of the workers. Yet they had to have an answer that was not just formal, but also practical. We invited the designers to come to the party committee and listen to reports from the site. Soon the plant workers adapted their production lines without a slowdown at all.

At one time we were very upset by the fact that communists working "on the line" were cut off from the party committees of the trusts. This can be understood, because people were working thousands of kilometers from their base organization. We decided to "build bridges" using long-term plans of party organizational and political indoctrination work which we prepare together with the local party bodies.

For example, together with the Chuvash Oblast party committee we determined what measures would be taken, when, and precisely who would be responsible for them. We agreed that fulfillment

of plans and rational use of resources in construction of the export gas pipeline would be monitored, on the one hand, by our communists, and on the other hand by employees of the industrial-transportation division of the oblast committee. Together we worked out plans for lecture propaganda and explaining the construction project in the local press.

We established similarly close contacts with the Central Committee of the Ukrainian Communist Party and Tyumen, Perm, and Ulyanovsk oblast party committees.

Local party members are helping form consolidated party groups made up of communists from the subdivisions that are included in the comprehensive teams. Although these are temporary bodies, they help take care of conflicts that arise at the intersecting points of associated collectives.

Concern for everyday living conditions, leisure time, and the microclimate in labor collectives is one of our priorities. The routes of the gas pipelines pass principally through taiga and tundra which are thick with mosquitoes in the summer and suffer bone-chilling cold in the winter. It is essential, therefore, that a person coming home from work be able to warm himself, dry his clothing, and find interesting and useful things to do.

Through the efforts of operational groups of the party committee the best models have been found here too: the Kuybyshevtruboprovodstroy and Severtruboprovodstroy trusts. Their practices were recommended for broad dissemination by a special resolution of the collegium and party committee of the Ministry of Construction of Petroleum and Gas Industry Enterprises and the central committee of the sectorial trade union. We are following the best examples by establishing 53 consolidated living communities in the energy corridor through which the new pipeline will pass.

The specific features of the sector and the vast challenges which we must meet in the next 2-3 years have also led to the appearance of such organizational formations as the ideological commission, the commission on work with young people, and the sectorial headquarters for management of competition.

The ideological commission, for example, recently heard a report by N. Rusanov, head of a permanent party group and deputy chief of the administration of personnel and everyday living conditions. The subject was the work of the coordinating council of Glavsibtruboprovodstroy [possibly Main Administration for Pipeline Construction in Siberia] on organization of socialist competition, party political work, and improving the social and domestic conditions of collectives of construction workers on gas pipelines from Western Siberia to the Central Zone. N. Kurbatov, head of the main administration, and A. Lysenko, secretary of the party committee of the Priob'truboprovodstroy Trust, were invited to the meeting of the commission. There was a solid discussion, concerning both successes and shortcomings that must be eliminated.

Deputy ministers M. Khusnutdinov and V. Chirskoy presented reports. It turned out that there are many improvements needed in management style. And this cannot be put off, because labor productivity on the line depends on it.

The party committee also assumed control of the comprehensive program for scientific-technical re-equipping of the sector. Minister B. Shcherbina and his deputies are directly responsible for its three most important areas.

Cooperation among communists of the administrative apparatuses of associated ministries has become the norm. It was possible to speed up delivery of equipment to the construction sites thanks to measures taken at a joint meeting of the party committees of the ministries of Construction of Petroleum and Gas Industry Enterprises, Gas Industry, Petroleum Industry, Electrical Equipment Industry, and Chemical Industry.

The export pipeline will be a major test of the militance of our party organizations. Communists are striving to make creative use of work know-how accumulated earlier in the labor collectives and to complete the project ahead of schedule.

11,176

CSO: 1822/13

PIPELINE CONSTRUCTION

COMPUTER PLANNING FOSTERS IMPROVED WORK ON PIPELINE

Moscow STROITEL'NAYA GAZETA in Russian 1 Oct 82 p 2

[Article by A. Ivanov, deputy director of the information-computing center on the Ministry of Construction of Petroleum and Gas Industry Enterprise and candidate of technical sciences, and I. Mazur, chief of Glavtruboprovodstroy]

[Text] There are cases where a comprehensive line production team [potok] has received the work drawings, has the necessary machinery and qualified specialists, and is receiving supplies, but still the work does not get moving.

This may be the result of inaccuracies in the plan which increase the volume of earthmoving work and demand more excavators. It may be because unfavorable weather conditions have disrupted the work rhythm. There are many such surprises! Therefore, organizational-production decisions for construction of the line part of a trunk pipeline must be worked out in several alternatives and take into account the random element.

A group of young scientists from VNIIST [All-Union Scientific Research Institute for Construction of Trunk Pipelines], the Moscow Institute of Petrochemical and Gas Industry imeni Gubkin, and the Mosgazprovodstroy Trust of the Ministry of Construction of the Petroleum and Gas Industry Enterprises worked out a method for optimizing the plans of production work and introduced it in practical pipeline construction work. The plan proposes several alternatives that are close to optimal and cover various alternative compositions of the teams, different technological schemes of work, and different calendar schedules. The alternatives are evaluated by the criteria, the most efficient of which is introduction of pipeline at the scheduled time.

What is the best way to realize the potential of the large comprehensive teams? To answer this question the group formulated the methodological foundations for deciding organizational questions by mathematical methods on the computer.

The activities of a team, like any construction subdivision, depend greatly on management of material resources. Analysis of expenditure norms and wholesale prices for material showed that their structure varies substantially by weight and cost. For example, under gas pipeline construction conditions in the middle zone pipe accounts for up to 80 percent of the weight and cost of all materials, while reinforced concrete weights are 10 percent and insulation materials are up to five percent of the cost and about one percent of the weight. All other

materials account for less than five percent. This gives construction organizations incentive to use new, original methods of managing pipe deliveries.

The need to optimize organizational-technological decisions in construction of trunk pipelines arose comparatively recently. This was not a question when the pipe diameter was small and pipelines were relatively flexible. Today, when the diameter of the pipe is almost the height of a human being, the workload in laying pipe has increased significantly, a large number of bent linking pieces is required, and the volume of earthwork to level out the terrain has increased. But where on the pipeline and in what quantities are these linking pieces needed in order to insure the minimum volume of work and high pipeline reliability in operation?

Planners looking at the vertical profile of the line can intuitively distribute them over different segments of the pipeline. But how often do they guess the optimal version? In the past there have been many mistakes, especially in regions with rugged and mountainous topography. These mistakes by planners are usually corrected by the project supervisor "by eye." But how much does this cost if, for example, on the gas pipeline from Urengoy through Pomary to Uzhgorod alone the volume of earthwork will be about 130 million cubic meters?

In solving the problem scientists selected a basic criterion of optimality: minimum expenditures with due regard for the rigidity and elongation of the pipeline. The problem is solved using the dynamic programming technique which required a complete mathematical description of the characteristics and distinctive features of the terrain in order to automate the calculation of different alternatives. After all, in the optimal alternative, the pipe must have equal strength on any segment of the line and all along its length the design must lie next to the ground. The number of possible schemes is extraordinarily large. The computer eliminates some of them from study as unacceptable; it calculates others and gives recommendations.

Analysis showed that the new method will make it possible to reduce the volume of earth work by 400 cubic meters on one kilometer of pipeline with 1,220-1,420 millimeter pipe on level terrain and up to 600 cubic meters per kilometer on rugged and mountainous terrain. At the same time the requirement for bent linking pieces is reduced 12-15 percent, which simplifies the technology of pipe laying.

The research group has already passed its developed and tested methods on to planning institutes and "orgtekhstroy's" [possibly organizations for technical support of construction] of the main administration. There the methods are being used to compile work plans that envision optimal compositions and arrangement of line production teams based on a simulation model of the process. This is producing a very tangible impact.

For example, organizing the delivery of material resources to subdivisions of Glavtruboprovodstroy in the new way in the segment of about 1,000 kilometers between Urengoy and Novopskov made it possible to reduce above-norm stocks of materials by 23 percent. The average pace of work of the teams held consistently at about one kilometer a day. This was also facilitated by fundamentally new methods of organizational-technological preparation for construction: a faster pace of work in clearing the route, road construction, and installation of

complex sectors of the line and crossings over rivers and roads — the rate of construction of the transportation system depends largely on their readiness.

The technology of building the pipeline using pipe with factory insulation is producing a large impact. This makes it possible to transfer part of the labor-intensive jobs to permanent sites and improve the quality of work.

The creative collective that proposed the new methodology for developing work plans has been in existence for several years now. Its labor results are seen in construction of the large petroleum pipeline from Surgut to Polotsk and for the gas pipelines Urengoy — Gryazovets — Moscow, Urengoy — Petrovsk, Urengoy — Novopskov, and Urengoy — Uzhgorod. The recorded economic impact alone from this is more than 2 million rubles.

The work of the research collective has not gone unnoticed. Its developmental projects were exhibited at the All-Union Exhibition of the Achievements of the USSR Economy and awarded a gold medal and diploma.

The work of the young authors has been nominated for the 1982 Leninist Komsomol Prize. We believe that this major work can participate in the competition and win a prize.

11,172

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PIPELINE CONSTRUCTION

AUGUST REPORT ON URENGOY — UZHGOROD PIPELINE PROJECT

Moscow EKONOMICHESKAYA GAZETA in Russian No 37, Sep 82 p 4

[Article by A. Panin: "August on the Route from Urengoy to Uzhgorod"]

[Text] The past month was filled with major events on the 4,450-kilometer gas pipeline route from Urengoy through Pomary to Uzhgorod. The delivery of various types of materials increased, and more than 1 million tons of materials are needed for each thousand kilometers of pipeline.

Work on the export gas pipeline is being done by organizations of the Ministry of Construction of Gas and Petroleum Industry Enterprises concurrently with completion of 24 compressor plants on the Urengoy — Petrovsk system and the line part of the Urengoy — Novoposkov pipeline. The construction workers have turned over almost the entire pipeline for testing there. The remaining 230-kilometer segment in specially difficult terrain of northern Tyumen Oblast will be built in December when the swamps freeze over.

Plans contemplate using comprehensive construction of the Urengoy — Uzhgorod pipeline on a broad scale with an orientation to good final results. By the end of September all the main collectives of construction and installation workers will be entirely concentrated in their assigned sectors.

According to the schedule, the line part is to be launched in operation by individual segments beginning at Urengoy; launching is planned for May, August, September, November, and December 1983. The largest work volume on the line and the 17 compressor plants of the first phase will be done in Tyumen, Sverdlovsk, and Perm oblasts, the Udmurt, Tartar, and Chuvash autonomous republics, and Gorky, Kursk, Poltava, Vinnitsa, and Ivano-Frankovsk oblasts.

Foundation work has begun at the sites of the first-phase compressor plants. During the current year it is necessary to complete ground preparation and grading and build equipment storage warehouses, access roads, and other facilities. The required number of hoisting cranes, excavators, and motor vehicles are now being sent there. In addition to the Ministry of Construction of Petroleum and Gas Industry Enterprises organizations of the USSR ministries of Industrial Construction, Construction, Construction of Heavy Industry Enterprises, and Power are participating in building the plants.

All work on the gas pipeline from Urengoy through Tomary to Uzhgorod is being done according to schedule, while some jobs are ahead of schedule,

Here are the main results from August. The plan for the month called for reinforcing welding on 320 kilometers of pipe in units at the storage depots. In fact 500 kilometers of pipe was welded on the stands. The welded pipe units are hauled from the depots, which are generally close to railroad stations, in heavy-duty specialized trucks. The distance to the place where they are laid in the trenches is ordinarily 50-100 kilometers.

As of 1 September more than 650 kilometers of pipe had been welded into the system on the line itself, 285 kilometers of this in August. About 400 kilometers of pipe was laid in the trenches. The total work done in August was twice as much as in July. Engineering structures are being built at places where the pipeline intersects with water obstacles, railroads, highways, and other communications lines.

Competition among the comprehensive production teams and associated collectives for timely and ahead-of-schedule launching of pipeline facilities is developing quickly under the "worker relay" principle. In Tyumen, Sverdlovsk, and Perm oblasts the new line is being built by collectives of Glavvostoktruboprovodstroy who have moved over from the Urengoy — Novopskov line. They have assumed the obligation of completing primary line work on the 750-kilometer segment before the end of the year.

The workers of the comprehensive teams of Glavyuzhtruboprovodstroy have obligated themselves to turn over 339 kilometers of the pipeline for operation two months ahead of schedule, which means in September 1983. Organizations of Glavukr neftegazstroy have obligated themselves to lay the segment of about 400 kilometers in Kiev and Vinnitsa oblasts by the 66th anniversary of Great October, also significantly ahead of schedule. The Ukrainian construction workers are moving to this project after completion of work on the Gryzovets (Vologda Oblast) — Minks — Ivatsevichi gas pipeline.

Making use of accumulated know-how and introducing progressive organizational and technical concepts, the leading collectives of a number of comprehensive production teams are successfully campaigning to lay at least one kilometer of pipeline a day. Among them are the teams headed by Hero of Socialist Labor Comrade Shaykhutdinov and Comrade Rozanov of the Tatnefteprovodstroy Trust and Comrade Mikhel'son of the Kuybyshevtruboprovodstroy Trust. The collective of the comprehensive production team headed by Comrade Gevorkyan of the Transcaucasian Construction Administration has set its goal for the fourth quarter of this year at putting 60 kilometers of pipeline in the foothills of the Carpathians into operation.

The Komsomol is enlarging its sponsorship role. Gas pipeline construction sites have been declared all-Union shock Komsomol construction projects. A new contingent of 5,000 young volunteer construction workers is being sent to the Urengoy — Uzhgorod line in September and October.

PIPELINE CONSTRUCTION

PROGRESS REPORTS ON URENGOY-UZHGOROD PIPELINE AS OF 1 OCTOBER

Overall View of Work Done, Upcoming Tasks

Moscow IZVESTIYA in Russian 2 Oct 82 p 2

[Article: "Shock Labor Every Day"]

[Text] Each new day that brings us closer to the glorious 60th anniversary of the formation of the USSR also brings good news of the labor achievements of Soviet people in all areas of economic building. Large-scale socialist competition has developed with new force to successfully fulfill plan assignments and socialist obligations of the second year of the five-year plan.

Among the leaders in this deeply patriotic movement are many collectives of the Ministry of Construction of Petroleum and Gas Industry Enterprises who are meeting the challenges given to them by the 26th party congress and the November 1981 Plenum of the CPSU Central Committee with honor. Comrade L. I. Brezhnev called construction of the five trunk gas pipelines from Western Siberia to the Central Zone and the transcontinental export gas pipeline from Urengoy through Pomary to Uzhgorod the principal construction project of the five-year plan. Already today we can say confidently that this highly complex engineering, construction, and economic challenge is being met much more rapidly than contemplated.

Construction workers launched the first line from Urengoy through Gryazovets to Moscow ahead of schedule. And it is important to emphasize here that the pipeline was brought to projected capacity in its very first year of operation. This illustrates the excellent quality of construction and installation work both on the line and on the compressor plants, which are equipped primarily with domestically produced machinery. This reflects the high level of our Soviet industry, our plants, and our engineers, technicians, planners, designers, and the workers whose hand built the machines, mechanisms, and instruments on a contemporary level.

Equally good results have been achieved on the second gas pipeline, from Urengoy to Petrovsk. The line part of this pipeline was completed ahead of schedule and it is already working toward five-year plan goals. The day is not far off when we will joyfully congratulate pipeline construction workers on another brilliant victory, completion of construction and launching of the third pipeline, from Urengoy to Novopskov.

There is hardly an industrial sector in the country which does not use natural gas. Almost all the industrial enterprises in the large cities of the Ukraine, for example, have been switched to gaseous fuel. The most significant industrial consumers of natural gas are ferrous metallurgy, chemistry, the building materials industry, machine building, and metal working. In the metallurgical industry natural gas is used in open hearth and smelting production, manufacture of hot rolled products, and in ore dressing. In the last five years the number of apartments with gas hookups in the country has increased almost 5.5 times to a total of 57 million apartments today.

But now the attention of the entire world is focused on progress on the export gas pipeline from Urengoy through Pomary to Uzhgorod. This line has aroused special interest, which has been intensified by the short-sighted policy of the U. S. administration, by its "sanctions."

And of course, these "sanctions" could not stop the pipeline construction workers. Here are just a few figures that describe the actual situation on the pipeline from Urengoy through Pomary to Uzhgorod. Work on the line still has not reached full force; more and more material and labor resources are being relocated to this project. There are now 20 production teams employed there, but this is no more than half the personnel that will be deployed. But 1,000 kilometers of pipe out of the total pipeline length of 4,500 kilometers has already been welded into the line.

And let us point out another fact: the daily rate of pipeline construction has already reached 15-16 kilometers! The thoughtful reader who takes up his pen will quickly calculate when the entire line can be completed. But the pace of work will increase too.

Who is working in the production teams? This is by no means an empty question. We asked the Ministry of Construction of Petroleum and Gas Industry Enterprises to give the names of the best workers in the sector. We cannot mention or illustrate them all: many, many highly qualified specialists and outstanding organizers of the production process are engaged in laying the trunk pipelines. IZVESTIYA has already written about some of them. Today we will give some more names. Here they are, the heroes of the project.

Plans Being Fulfilled

Moscow IZVESTIYA in Russian 4 Oct 82 p 2

[Article by G. Chesnokov, chief of the central dispatching division of the USSR Ministry of Construction of Petroleum and Gas Industry Enterprises: "We Have Given Our Word, and We Will Keep It!"]

[Text] G. Chesnokov, chief of the central dispatching division of the USSR Ministry of Construction of Petroleum and Gas Industry Enterprises, comments on the 1 October 1982 report on work progress in pipeline construction.

Before looking at the particular lines, we would call your attention to the following column of the report: "Temperature in Tyumen — 1 degree, in Urengoy — 2, in Igrim — 0, and in Komsomolskiy — 0." This requires no comment. Weather conditions in Siberia to a great extent determine the pace of earthmoving and welding work, the rate of travel of truck caravans carrying pipe and construction elements, and finally, even the mood of the people.

But despite the chilling weather, to judge by the report construction and installation workers have done heroically in recent days. Take the section devoted to the important priority project, the 3,346-kilometer gas pipeline from Urengoy to Novopskov. It is common knowledge that the collectives of subdivisions of the Ministry of Construction of Petroleum and Gas Industry Enterprises, following the initiative of the workers of Glavtruboprovodstroy, have undertaken to complete line work on the route ahead of schedule in honor of the 60th anniversary of the USSR. Are they keeping their word?

"They are doing very well," says G. Chesnokov. "Look at the figures. As of this morning they had laid and insulated 3,100 kilometers of pipeline. Of this 2,500 kilometers has been blown clean, which means prepared to receive gas, and 1,500 kilometers have been tested.

"Today's report also gives a place to another giant line, the pipeline from Novopskov through Mozdok to Kazi-Magomed. This is a continuation of the line laid earlier from Urengoy to Novopskov. Its total length will be more than 4,000 kilometers. The report says that the southern arm of the line for a distance of about 1,000 kilometers is being readied for testing and launching.

"But the main focus of efforts this year is the export gas pipeline from Urengoy through Pomary to Uzhgorod. Despite the fact that not all the comprehensive production teams have gone into operation yet, work there is ahead of schedule. The report today reads as follows:

"pipe delivered — 3,000 kilometers, 40 kilometers a day;

"welded into the line — 1,001.2 kilometers;

"trench dug — 820 kilometers, 20 kilometers a day;

"insulated and laid — 700 kilometers, 16 kilometers a day."

"The pace of work on the export line is steadily growing. Whereas just three months ago, in June, 75 kilometers was welded into the line, the figure in September was already 350 kilometers. With respect to insulation and laying the increase over June was 260 kilometers.

"The collectives of the comprehensive production teams headed by A. Buyankin of the Mosgazprovodstroy Trust, A. Gubitskiy of the Krasnodartruboprovodstroy, and V. Maslakov of the Novosibirsktruboprovodstroy Trust, V. Belyayeva of the welding-installation trust, S. Gevorkyan of the Transcaucasian Administration, and A. Pinevskiy of the Soyuzgazspetsstroy Trust have reached a consistent rate of one kilometer a day or more.

"In the next year 17 compressor plants are to be launched in operation on the export pipeline. Preparatory and primary work has begun at many sites and the pace of work must increase every day. This applies in full to the trunk line from Urengoy to Novopskov, where 23 compressor plants are to be launched in 1982-1983, including eight of them this year, in December."

Meanwhile the next operational report from the forward edge is being prepared. Reports are coming in from Uzhgorod and Noril'sk, from Baku and Urengoy, from Kiev and Ashkhabad. Forecasts are a pressing matter today. On the Ukrainian arm of the export pipeline, for example, with the start of October subdivisions of Glavtruboprovodstroy and Glavukrнеftgazstroy are trying to increase the daily rate of construction and installation work by several kilometers. Eight more production teams will go into action in the Glavvostoktruboprovodstroy segments. There will be an assault on the rugged Pelymskiye and Kernal'skiye swamps. With the arrival of cold weather teams of Glavsibtruboprovodstroy will go to work on large swampy areas. Preparation of mechanized columns has begun.

Specific News Items from Regional Newspapers

Moscow IZVESTIYA in Russian 2 Oct 82 p 2

[Article: "News from the Line — Traveling Editors at the Sites"]

[Text] PRAVDA UKRAINY, Kiev

Crossing the water near Cherkassy is one of the principal tasks facing construction workers of the export gas pipeline in the Ukrainian segment of the route. Two lines of large-diameter pipe with a total length of 10 kilometers have to be stretched along the bottom of two rivers and several lake beds, and more than 30 kilometers must be laid across swampy terrain.

Construction administration of underwater engineering work No 5 of the Vostokpodvodtruboprovodstroy Trust is laying the gas pipeline along the Dnepr, Ros', and swampy terrain in the neighborhood of Prokhorovka. Work began just recently, but many construction workers have already shown initiative and resourcefulness.

KURSKAYA PRAVDA

Sergey Gvozdenko is 25 years old. But in his short working career he has been all around the European part of the country, even though he has not changed his specialization. His specialization is welder.

He is now a member of the brigade of the experienced worker Boris Yevgen'yevich Rudikov. They are laying the world-reknowned pipeline not far from Okhochevska. Sergey is the youngest member of the collective, but in terms of experience and skill he is as good or better than his fellows. It was he who led the vocational competition for the title "Best Welder of the Krasnodartruboprovodstroy Trust."

ZVEZDA, Perm

The collective headed by V. F. Maslakov was awarded first place for the USSR Ministry of Construction of Petroleum and Gas Industry Enterprises last week for socialist competition among the production teams that are building the trunk gas pipeline from Urengoy to Uzhgorod.

VOLZHSKAYA KOMMUNA, Kuybyshev

Pipeline builders from the Moscow Welding-Insulation Trust, after conducting hydraulic tests, have cleared the water from the last 13 kilometers of the Urengoy - Novopskov pipeline of the 126 kilometers laid across the territory of the two oblasts and two autonomous republics of the Volga region.

UDARNAYA STROYKA, Ufa

The newspaper reports on progress in construction of compressor plants on the Urengoy - Petrovsk gas pipeline. In particular it gives the following information: "Kungurskaya - all the communications lines have been compacted. Four units are prepared for launching and launching-adjustment work is underway on three of them. Almaznaya - seven units are working on the trunk line."

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CSO: 1822/13

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PIPELINE CONSTRUCTION

CONSTRUCTION OF FOURTH CZECHOSLOVAK GAS PIPELINE READIED

Prague RUDE PRAVO in Czech 29 Oct 82 pp 1, 2

[Article by Lumir Hrudka]

[Text] Prague, 28 Oct--The country's transit system of gas pipelines represents now 3,200 kilometers of pipes and can transport daily more than 130 million cubic meters of gas, over 40 billion cubic meters of gas annually. In this way, Soviet natural gas is reaching not only socialist states, but also other countries of West Europe.

Preparations are culminating at this time for the next stage of the construction of the fourth gas pipeline across the republic. This is evidence that mutually advantageous international cooperation of states with different social systems is being expanded.

Thanks to cooperation with the Soviet Union, our republic is becoming one of the biggest expeditors of natural gas in the world. The USSR has signed agreements with a number of Western countries concerning an increase of gas deliveries in the forthcoming years, and is building a new export gas transcontinental pipeling from Siberia to West Europe, in spite of the embargo and efforts of the Reagan administration. The continuation will be actually in the form of a new, fourth line of the transit gas pipeline across the territory of the republic.

The extent of it is documented by the fact that the transportation capacity of the transit system will almost double, and will reach about 70 billion cubic meters of natural gas annually.

Preparations for such a big construction task are demanding. The builders of the gas pipeline discussed the course and problems of the preparations at the Thursday business meeting in Ricany, which was also attended by the deputy chairman of the State Planning Commission, Vitezslav Vinklerek, and the CSSR deputy minister of fuels and power, Ladislav Blazek.

The new branch of the transit gas pipeline, which is 860 kilometers long, runs along the present route from the Soviet border all the way to the western part of the republic, to Rozvadov. Pipes 1,420 millimeters in diameter, which will be used, were never used in this country before.

It requires thorough preparation of welders for the new welding technology, flexible organization of labor, transportation of the pipes, and so on. General contractors Plynostav in Pardubice and Hydrostav in Bratislava will utilize experience gained so far to speed up the operations and make them more economical. Calculations indicate advantages of certain new welding methods and eventual use of automated machines, such as those which prove to be effective, for example, in the USSR.

The new gas pipeline represents technical progress even in terms of the equipment of the compression stations, which will be located in Velke Kapusany, Breclav, and in Veseli nad Luznici. Workers of the CKD [Ceskomoravska Kolben-Danek] in Prague will be the contractor. The success of the entire construction development will depend on them to a great extent. They are to produce and deliver entirely new aggregates which have an electric motor with an output of 25MW [megawatts]. One single installation will replace four present turbosets of gas turbines. This gives an idea about the substantial savings of material, energy and construction space of the compression stations. In developing the new installations, the CKD cooperates with Soviet specialists and research institutes. The significance of the new technology is increased by the fact that it is to be used in the future to modernize the present compression stations. The efficiency of the aggregates will increase substantially, from approximately 28 percent to more than 70 percent.

Workers of Plynostav and Hydrostav are building first the southern part of the new route, and it will be possible to put the first southern sector in operation at the beginning of 1985. They will complete the entire pipeline by the beginning of 1988, and compressor stations will be completed entirely 1 year later.

Good and careful preparation of the big construction project is a key factor right now. The general project designer is Plynoprojekt in Prague, which so far has delivered executory projects for four constructions. Preparation of equipment for certain construction sites has also started at this time. Construction enterprises expect that distribution of pipes along the route and the first welding operations will begin in the first quarter of next year.

To complete such an extensive task in a relatively short time means to apply consistently the flow method of construction work. Plynostav Pardubice and Hydrostav Bratislava are to weld and lay down 9.5 kilometers of pipes monthly.

The next stage of the construction of the cross-country gas pipeline is one of the biggest construction jobs of the seventh and eighth 5-year plans.

The construction will help to strengthen our fuel and energy balance account, because the annual profit from providing transit services will represent annually approximately 2 billion cubic meters of natural gas.

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CSO: 2400/48

PIPELINE CONSTRUCTION

BRIEFS

ELECTRONIC GAS PUMPING--Leningrad--The compressor stations of the Urengoy-Pomary-Uzhgorod gas pipeline will be serviced by one-third fewer operators than normal. Control of the gas-pumping units GTN-25 which the route will be equipped with will be mainly done automatically. The equipment is being developed in the Leningrad association "Burevestnik." The firm has begun to assemble the first instrument in the new series. This is a type of electronic "brain" of the unit. "The innovation is distinguished by a large-sized memory. It is capable of 'remembering' numerous variants of actions for each specific case," said the chief designer G. Goroshin. "For example, depending on the change in the demand for transported gas, the controlling device will be able to independently adjust the equipment. These and many other complicated operations are being automated for the first time." [Text]. [Moscow IZVESTIYA in Russian 21 Sep 82 p.2] 9035

BAKU SHIPMENTS--The lengths of steel pipes of large diameter weighing over 12 T can be placed in one procedure in the trench by each of the pipelayers that have begun to be manufactured by the Baku machine construction plant imeni B. Sardarov. The first batch of improved units was sent ahead of schedule to the Tyumen Oblast for construction of the Urengoy-Pomary-Uzhgorod gas pipeline. [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 15 Sep 82 p.1] 9035

EARLY PIPELINE COMPLETION--Ufa--The construction of the line of the Urengoy-Novoposkov gas pipeline was completed 3 months ahead of schedule. The subdivisions of Glavvostoktruboprovodstroy had the opportunity to transfer personnel, machines and mechanisms to the trunkline of the five-year plan, the Urengoy-Pomary-Uzhgorod gas pipeline. One of the first to be rebased to the new route is the collective of the comprehensive production line headed by V. Moslkov. Among the subdivisions of the central board it has strong control of leadership. The collective has already cleaned 100 kilometers of route for laying the gas pipeline, welded and placed into the trench pipes extending dozens of kilometers. The situation, mood of the people, and this means the production indicators depend a lot on how the communists work. This is well understood in the party collective. Here the party organization is strong. It is headed by the experienced route worker G. Medvedev. It unites about 30 communists of many specialties, excavators, welders, insulators and electrical installers. [Text] [Moscow GUDOK 19 Sep 82 p.1] 9035

PIPELINE TO KULYAB--Kulyab--Having overcome the water obstacle, the 14-kilometer lowland of the Yakhsu river, the builders of the SMU-1 from the association "Tadzhikneft" have completed an important stage of work in laying the gas pipeline Beshtentyak'kulyab. This gas trunkline is being erected at accelerated rates. Its laying is being done from 2 sides, from Kulyab and Bal'dzhuan. Kulyab section is headed by the experienced builder Khasan Abzalov. The work of the brigade of Sh. Valiyev, gas welder R. Sultangariyev, insulator F. Shodiyev, and machine operator of the pipe layer V. Vasil'yev is considerably ahead of schedule. At the same time the builders have started planning the area for construction of the automatic gas-distributing station. Bal'dzhuan section is headed by the older brother of Khasan, Anvar Abzalov. In September the collectives of both sections will prepare another 12 kilometers of the route. The length of the gas trunkline Beshtentyak-Kulyab is 50 km. The route passes through the intersected locality on mountain slopes and across rivers. The builders have decided to complete construction of the gas pipeline this year and at the end of December to begin to burn the gas flame in Kulyab. [Text] [Dushanbe KOMMUNIST TADZHIKISTANA in Russian 19 Sep 82 p 2] 9035

COMPRESSOR STATION PLANT--Khar'p (Tyumen Oblast), 22 Sep--Structural parts for erecting compressor gas pumping stations will be manufactured by the plant which is being built in the arctic city of Khar'p. Six main gas pipelines will begin in the Tyumen north in the current five-year plan. The new plant will help to cope with the vast program for their building up. Production of parts for compressor stations will be set up here for the first time. Until now they had to be shipped in thousands of kilometers from other regions of the country. [Text] Moscow PRAVDA in Russian 23 Sep 82 p 1] 9035

GAS PUMPING UNITS--Leningrad, 22 Sep--Three-fourths of the gas extracted in our country is transported with the help of machines designed and fabricated in the association "Nevskiy Zavod" imeni V. I. Lenin. Now the collective is actively working on fulfillment of a border especially important for the development of the fuel and energy complex. Preparation for series production and increase in output of the gas-pumping units with output of 25,000 kW is underway at the enterprises on short schedules. A party meeting took place today in the association. The speaker, member of the CPSU Central Committee Politburo, first secretary of the Leningrad party obkom, G. V. Romanov transmitted from Comrade L. I. Brezhnev to the communists, workers, engineers, scientists, employees, and the entire collective of the Nevskiy machine builders wishes for friendly work, successful fulfillment of the tasks set by the party, and new achievements in accelerating scientific and technical progress. The meeting participants discussed the tasks of the communists of the association to mobilize the collective for fulfillment of the decree of the CPSU Central Committee and the USSR Council of Ministers for measures to guarantee start-up of the main gas pipeline Urengoy-Pomary-Uzhgorod. Increased commitments were adopted. The report will be published in the next number of PRAVDA. [Article by V. Gerasimov, PRAVDA correspondent] [Text] [Moscow PRAVDA in Russian 23 Sep 82 p 2] 9035

BALLAST LOADS--Kharkov--A total of 400 units of special ballast loads were sent from the plant "Krasnyy Oktyabr" to the builders of the Urengoy-Uzhgorod gas pipeline. A total of 1300 of these large-sized parts were cast. The builders of the gas pipeline appealed to the Kharkov machine builders to

develop casting of parts needed for sinking the gas pipeline pipes in overcoming water obstacles. The enterprise designed molds and developed the technology for casting in them. The order was fulfilled ahead of schedule. [Article by correspondent of RABOCHAYA GAZETA] [Text] [Kiev RABOCHAYA GAZETA in Russian 16 Sep 82 p 1] 9035

PIPELINE TRANSFORMER--Zaporozhye--A new transformer has been sent from the main plant of the association "Zaporozhtransformator" to construction of the Urengoy-Uzhgorod gas pipeline. It was manufactured 2 weeks ahead of the period stipulated by the shipment schedule. This is the last unit whose output ends the fulfillment of the annual shipments on the orders of the Ministry of the Gas Industry. At the same time, it is the first in the series of updated transformers: it weighs 10.3 tons less than the previous ones and its "fueling" requires much less transformer oil, 3.3 T less. [Article by correspondent of RABOCHAYA GAZETA] [Text] [Kiev RABOCHAYA GAZETA in Russian 16 Sep 82 p 1] 9035

PIPELENGTH CARRIERS--A batch of pipelength carriers of power 19 T manufactured by the machine builders of the plant "Bakinskiy Rabochiy" in the Azerbaijan SSR was sent to the route of the Urengoy-Uzhgorod gas pipeline. [Text] [Moscow PRAVDA in Russian 24 Sep 82 p 2] 9035

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